CHAPTER 4
INSTALLATION OF PGS
LESSON PLAN 4

METHOD:

Conference, demonstration, and practical exercise

TIME ALLOTTED:

3.0 hours

COURSE PRESENTED TO:

a. LAV-25 crews
b. Instructors
c. TAVSC personnel

TOOLS, EQUIPMENT, AND MATERIALS (Per Vehicle Crew):

a. LAV-25 with SL3
b. One PGS set
c. TM 08594A-12&P

PERSONNEL:

a. Primary instructor
b. Assistant instructor

INSTRUCTIONAL AIDS:

a. Overhead projector
b. Viewgraphs (Appendix B)

REFERENCES:

a. TM 08594A-12&P, Chapter 2
b. TM 08594A-10/1A

APPENDICES:

Appendix A. Safety
Appendix B. Viewgraphs

4-1. INTRODUCTION. (5 minutes)

Note. Show Slide 1.

a. **Reason.** The PGS is designed for quick and easy installation. To use PGS to its full potential, you must be able to correctly and safely install the system on the LAV-25.

Note. Show Slide 2.

b. **Training Objective.** Given an operational LAV-25 with SL3, and with pre-mission checks, boresighting, vehicle preparation, and PGS PMCS completed, the crew will properly install PGS IAW TM 08594A-12&P, Chapter 2.

c. **Procedure.** During this block of instruction we will cover the installation of a PGS set in preparation for training. You will have an assistant instructor for the practical exercise portion of this class. You will use appropriate TMs to install PGS.

4-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISES. (140 minutes)

Notes.
1. The primary instructor now releases the student crews to their assigned assistant instructor for the practical exercise portion of this lesson.
2. Before students' arrival, ensure that an assistant instructor is assigned to each training station.
3. Direct students to their appropriate training station.
4. Each assistant instructor is to conduct a safety briefing for his small group IAW Appendix A.
5. Whenever possible, have the students serve as demonstrators during small group instruction. Have one student read the procedures while another student performs the task. To ensure all students get equal hands-on time, rotate the reading and performance responsibilities.
6. The assistant instructor discusses and clarifies the procedures as required and reinforces the training objective.

Warning. Ensure TURRET DRIVE LOCK is set to LOCKED before installing PGS.

Warning. Ensure vehicle MASTER SWITCH and turret power are OFF before installing PGS.

a. **PGS Installation Tasks.** Working as a crew, you will install PGS on LAV-25 IAW TM 08594A-12&P. Installation tasks include:

(1) Installation of exterior components
(2) Installation of interior components
(3) Installation of interior cables
(4) Installation of exterior cables
(5) Verification of installation

4-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISES (Con't).

b. **Installation of Exterior Components.**

(1) **Transceiver assembly.**

Caution. Ensure that the transceiver unit locking handle is in the locked position before lifting transceiver assembly from storage case.

(a) Place transceiver assembly over the end of 25 mm gun barrel and position on top of rotor extension.
(b) Align transceiver assembly vertically with arrow on 25 mm gun barrel and secure with locking handle and strap.

(2) **Front retro detector unit/hull defilade detector unit assemblies.**

(a) Lift retro detector assembly locking handle and position retro detector assembly on turret lifting eyes.
(b) Push locking handle down to locked position.

(3) **Rear retro detector unit/hull defilade detector unit assembly.**

(a) Position rear retro detector unit/hull defilade detector unit assembly on outside, center section and to the left of center strut on turret bustle rack.
(b) Push locking handle down to locked position.

c. **Installation of Interior Components.**

(1) **TBOS gunner's eyepiece unit.**

(a) Adjust focus on gunner's daysight.
(b) Lift locking lever and position TBOS gunner's eyepiece unit on gunner's daysight.
(c) Push locking lever down to locked position.

(2) **TBOS commander's eyepiece unit.**

(a) Using tool assembly in PGS storage case, loosen, but do not remove, two setscrews on commander's daysight browpad.
(b) Using tool assembly in PGS storage case, remove two screws and commander's daysight browpad.
(c) Install replacement browpad with two original screws.
(d) Adjust focus on commander's daysight.
(e) Lift locking handle and position TBOS commander's eyepiece unit on commander's daysight.
(f) Push locking handle down to locked position.

(3) **Shorting plug.**

(a) Open 25 mm weapons enclosure bag.
(b) Press feeder handle latch and pull feeder handle to the up and locked position.
(c) Disconnect vehicle connector from 25 mm gun power connector.
(d) Connect shorting plug to vehicle connector.
(e) Push feeder handle latch to the down position.
(f) Place cable beneath gun toward front so that cable cannot be damaged by gun movement.
(g) Close 25 mm weapons enclosure bag.

(4) **Vehicle interface assembly.**

Install vehicle interface assembly into HE ammunition box with lower beveled edge toward rear of turret.

d. **Installation of Interior Cables.**

Notes. 1. W2, W3, W4, W5, W6, W9, W10, and W13 cables are factory installed on the vehicle interface assembly and are not to be disconnected except for maintenance purposes.
2. Once installed, ensure that each cable is secured with velcro straps.
3. Vehicle electrical cables should be connected and disconnected by qualified personnel only.

(1) **W13 cable (intercom cable).**

(a) Route W13 cable through the HE ammo feed port to the intercom amplifier box (AM 7162).
(b) Connect two W13 cable leads marked INTERCOM to AM 7162 audio input terminals.
(c) Loosen upper left mounting nut on AM 7162 and connect W13 cable ground lead. Tighten nut.

(2) **W14 cable (interface cable).**

(a) Disconnect CDA connectors J1 and J2.
(b) Connect CDA vehicle cable connector W105P4 to W14 cable connector W105P4.
(c) Connect vehicle cable W105P5 to W14 cable connector W105P5.
(d) Connect W14 cable connector CDA J1 to CDA connector J1.
(e) Connect W14 cable connector CDA J2 to CDA connector J2.
(f) Route connector J2 through HE ammunition feed chute port and connect to expansion unit connector J2.

4-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISES (Con't).

(3) **Control panel and TDRS memory card.**

(a) Install control panel bracket on HE ammunition box lid.
(b) Install TDRS memory card in control panel.
(c) Route control panel cable up through space between CDA and ammunition feed port then down through HE ammunition feed chute port and connect control panel cable connector J1 to vehicle interface unit connector J1.
(d) Position control panel bracket over HE ammunition box lid and secure control panel to bracket using magnets.

(4) **W12 cable (power cable).**

(a) Feed cable through ammunition feed port and connect W12 cable connector to vehicle interface unit connector J3.
(b) Disconnect vehicle cable W106P1 from the power distribution assembly (PDA).
(c) Connect W12 cable connector W106P1 to vehicle cable W106P1.
(d) Connect W12 cable connector PDAJ3 to PDA connector J3.

(5) **W9 cable (TBOS gunner's eyepiece unit).**

(a) Route W9 cable through HE ammunition box feed chute port and up along left side of turret to gunner's sight.
(b) Connect W9 cable connector J1 to TBOS gunner's eyepiece unit connector J1.

(6) **W10 cable (TBOS commander's eyepiece unit).**

(a) Route W10 cable up through HE ammunition feed chute port to commander's sight.
(b) Connect W10 cable connector J1 to TBOS commander's eyepiece unit connector J1.

(7) **W11 cable (TBOS video mixer).**

(a) Disconnect J1 cable from right side of DIM36TH sight assembly.
(b) Connect vehicle cable W106 to W11 cable connector W106.
(c) Connect W11 cable connector to DIM36TH sight assembly.
(d) Route remaining portion of W11 cable to HE ammunition box through HE ammunition feed chute port.
(e) Connect W11 cable connector TBOS VM to video mixer unit connector J3.

4-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISES (Con't).

e. **Installation of Exterior Cables.**

(1) **W8 cable (rear target system).**

(a) Connect W8 cable to L/R and R/R RDU. Route W8 cable forward following the external contours of right side of turret using velcro straps on upper bar of bustle rack and magnetic cable supports on upper outside edge of turret.
(b) Route remaining portion of W8 cable through HE ammunition ejection port.
(c) Route W8 cable from HE ammunition ejection port to HE ammunition box feed chute port.
(d) Connect W8 cable connector TCU J4 to target computer unit connector J4.

(2) **W7 cable (front target system).**

(a) Connect W7 cable to L/F RDU. Route W7 cable along top of turret between gunner's hatch and day/HIRE sight, continuing between commander's hatch and commander's daysight.
(b) Connect W7 cable to R/F RDU and route remaining W7 cable through HE ammunition ejection port.
(c) Route W7 cable from HE ammunition ejection port to HE ammunition box feed chute port.
(d) Connect W7 cable connector TCU J3 to target computer unit connector J3.

(3) **RSI antenna cable.**

(a) Route RSI antenna cable through HE ammunition ejection port to HE ammunition box feed chute port.
(b) Connect RSI antenna cable connector RSI J3 to RSI unit connector J3.

(4) **W1 cable (transceiver unit).**

(a) Connect W1 cable to transceiver unit connector J2. Route W1 cable toward rear and W7 cable.
(b) Following W7 cable, continue routing W1 cable between commander's hatch and commander's daysight. Route remaining portion of W1 cable through HE ammunition ejection port.
(c) Route W1 cable from ejection port to HE ammunition box feed chute port.
(d) Connect W1 cable connector VM J1 to video mixer unit connector J1.
(f) Secure all exterior cables through the specially designed slot in the R/F RDU/HDDU bracket at entrance of HE ammunition ejection port.

(5) **Velcro straps.** Verify that velcro straps of cables both inside and outside of turret are properly installed to ensure cables are secure and do not cause a trip or snag hazard.

4-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISES (Con't).

f. **Verification of Installation.**

(1) Verify that all units are properly installed.
(2) Check that all cables are secured with velcro straps.
(3) Check that cables are routed without loose ends and with only enough slack as is required for gun and turret movement.
(4) Check cable routing to ensure that no cable interferes with hatch operations.
(5) Elevate and depress the gun manually to verify that no interior or exterior cables or assemblies can be damaged.
(6) Rotate the turret manually to verify that no interior or exterior cables or assemblies can be damaged.
(7) Ensure all on-board equipment is stored to prevent damage to cables and assemblies.

4-3. FINAL REVIEW. (5 minutes)

a. **Student Questions.**

Note. Show Slide 3.

b. **Summary of Main Teaching Points.**

(1) Installation of exterior components
(2) Installation of interior components
(3) Installation of interior cables
(4) Installation of exterior cables
(5) Verification of installation

Note. Show Slide 4.

c. **Closing Statement.** This block of instruction has taught you how to properly and safely install PGS on a LAV-25.

APPENDIX A
TO LESSON PLAN 4

INSTALLATION OF PGS

SAFETY

The general safety regulations below must be followed during the performance of this lesson. All safety regulations outlined in TM 08594A-10/1A must be strictly followed.

1. Mount and dismount vehicle over left-front or through the back hatch.
2. Maintain three (3) points of contact while on top of vehicle.
3. Follow unit SOP on smoking near vehicle.
4. Do not go over or under gun barrel.
5. Ensure that TURRET DRIVE LOCK is set to LOCKED.
6. Set vehicle MASTER SWITCH OFF.
7. Turn turret power OFF IAW TM 08594A-10/1A, paragraph 2-56.
8. Ensure that AP and HE feed shaft knobs (located on left side of main gun feeder) are pushed IN before training. When knobs are out, electrical cables may be snagged causing damage to vehicle fire control system.
9. No cables should be connected or disconnected by untrained personnel.

APPENDIX B
TO LESSON PLAN 4

INSTALLATION OF PGS

VIEWGRAPHS